UNITED STATES
NUCLEAR REGULATORY COMMISSION
REGION I
2100 RENAISSANCE BLVD.
KING OF PRUSSIA, PA 19406-2713

November 10, 2016

Mr. Bryan C. Hanson
Senior Vice President, Exelon Generation Company, LLC
President and Chief Nuclear Officer, Exelon Nuclear
4300 Winfield Road
Warrenville, IL 60555

SUBJECT: NINE MILE POINT NUCLEAR STATION – NRC EVALUATION OF CHANGES, TESTS AND EXPERIMENTS AND PERMANENT MODIFICATIONS TEAM INSPECTION REPORT 05000220/2016007 AND 05000410/2016007

Dear Mr. Hanson:

On October 12, 2016, the U.S. Nuclear Regulatory Commission (NRC) completed an inspection at your Nine Mile Point Nuclear Station, LLC (NMPNS), Units 1 and 2. On October 12, 2016, the NRC inspectors discussed the results of this inspection with Mr. A. Sterio, Site Engineering Director, and other members of your staff. The results of this inspection are documented in the enclosed report.

The NRC inspectors did not identify any finding or violation of more than minor significance.

This letter, its enclosure, and your response (if any) will be made available for public inspection and copying at http://www.nrc.gov/reading-rm/adams.html and at the NRC Public Document Room in accordance with 10 CFR 2.390, "Public Inspections, Exemptions, Requests for Withholding."

Sincerely,

/RA/

Christopher G. Cahill, Chief
Engineering Branch 2
Division of Reactor Safety

Docket Nos.: 50-220 and 50-410
License Nos.: DRP-63 and NPF-69

Enclosure:
Inspection Report 05000220/2016007 and
05000410/2016007
w/Attachment: Supplemental Information

cc w/ encl: Distribution via ListServ

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DOCUMENT NAME: G:\DRS\Engineering Branch 2\MODS by site\Nine Mile Point\NMP Mods 2016007.docx
ADAMS ACCESSION NUMBER: ML16320A096

☒ SUNSI Review Complete By: J. Ayala		ADAMS ☒ Yes ☐ No	☒ Publicly Available ☐ Non-Publicly Available		☒ Non-Sensitive ☐ Sensitive		Keyword: NMP, Mods, 50.59
OFFICE	DRS	DRP	DRS				
NAME	JAyala	ADimitriadis	CCahill				
SIGNATURE	JA	AD	CGC				
DATE	11/8/16	11/7/16	11/10/16				

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U. S. NUCLEAR REGULATORY COMMISSIOM
REGION I

Docket Nos.	50-220, 50-410
License Nos.:	DPR-63, NPF-69
Report Nos.	05000220/2016007 and 05000410/2016007
Licensee:	Nine Mile Point Nuclear Station, LLC (NMPNS)
Facility:	Nine Mile Point, Units 1 and 2
Location:	Oswego, New York
Inspection Period:	September 12, 2016 through October 12, 2016
Inspectors:	J. Ayala, Reactor Inspector, Division of Reactor Safety (DRS) Team Leader E. DiPaolo, Senior Reactor Inspector, DRS K. Mangan, Senior Reactor Inspector, DRS J. Schoppy, Senior Reactor Inspector, DRS
Approved By:	Christopher G. Cahill, Chief Engineering Branch 2 Division of Reactor Safety

SUMMARY

IR 05000220/2016007, 05000410/2016007; 09/12/2016-10/12/2016; Nine Mile Point Nuclear Station, Units 1 and 2; Permanent Plant Modifications Engineering Team Inspection.

This report covers a 2 week on-site inspection period of the evaluations of changes, tests, or experiments and permanent plant modifications. The inspection was conducted by four region based engineering inspectors. The NRC's program for overseeing the safe operation of commercial nuclear power reactors is described in NUREG-1649, "Reactor Oversight Process," Revision 6, dated July 2016.

No findings were identified.

REPORT DETAILS

1. REACTOR SAFETY

Cornerstones: Initiating Events, Mitigating Systems, and Barrier Integrity

1R17 Evaluations of Changes, Tests, or Experiments and Permanent Plant Modifications (IP 71111.17)

.1 Evaluations of Changes, Tests, or Experiments (32 samples)

a. Inspection Scope

The team reviewed eight safety evaluations to determine whether the changes to the facility or procedures, as described in the Updated Final Safety Analysis Report (UFSAR), had been reviewed and documented in accordance with Title 10 of the *Code of Federal Regulations* (10 CFR) 50.59 requirements. In addition, the team evaluated whether Exelon had been required to obtain NRC approval prior to implementing the changes. The team interviewed plant staff and reviewed supporting information including calculations, analyses, design change documentation, procedures, the UFSAR, the Technical Specifications (TSs), and plant drawings, to assess the adequacy of the safety evaluations. The team compared the safety evaluations and supporting documents to the guidance and methods provided in Nuclear Energy Institute (NEI) 96-07, “Guidelines for 10 CFR 50.59 Evaluations,” as endorsed by NRC Regulatory Guide 1.187, "Guidance for Implementation of 10 CFR 50.59, Changes, Tests, and Experiments," to determine the adequacy of the safety evaluations.

The team also reviewed a sample of twenty-four 10 CFR 50.59 screenings and applicability determinations for which Exelon had concluded that no safety evaluation was required. These reviews were performed to assess whether Exelon’s threshold for performing safety evaluations was consistent with 10 CFR 50.59. The sample included design changes, calculations, procedure changes, and setpoint changes. The screenings and applicability determinations were selected based on the safety significance, risk significance, and complexity of the change to the facility.

In addition, the team compared Exelon’s administrative procedures used to control the screening, preparation, review, and approval of safety evaluations to the guidance in NEI 96-07 to determine whether those procedures adequately implemented the requirements of 10 CFR 50.59. The reviewed safety evaluations, screenings, and applicability determinations are listed in the Attachment.

b. Findings

No findings were identified.

.2 Permanent Plant Modifications (15 samples)

.2.1 ECP14-00915, Unit 2 Division 2 Emergency Diesel Generator Fuel Oil Piping Rerouting

a. Inspection Scope

The team reviewed engineering change package (ECP) 14-00915 that replaced and rerouted the fuel oil piping from the motor-driven fuel oil booster pump (2EGF*P4) to the shaft-driven fuel oil pump (2EGS*EG3) on the Unit 2 Division 2 emergency diesel generator (EDG). Exelon replaced and rerouted the original vendor-supplied piping to address minor fuel oil leakage and improve system reliability. The ECP also included the installation of three new piping supports.

The team reviewed the modification to verify that the design bases, licensing bases, and structural integrity of the EDG fuel oil piping and supports had not been adversely impacted by the modification. The team interviewed engineering staff and reviewed technical evaluations (including piping stress analyses) associated with the modification to determine if the Unit 2 Division 2 EDG would function in accordance with the design assumptions. The team compared installation drawings and plans to the as-built configuration to determine if Exelon appropriately implemented the modification as designed. The team performed several walkdowns of the Unit 2 Division 2 EDG and accessible fuel oil piping to independently assess Exelon's configuration control, the operating environment, and the material condition of the associated structures, systems, and components (SSCs). The team reviewed the system health report and recent surveillance test results to verify that the Unit 2 Division 2 EDG functioned as designed following the modification. The team also reviewed corrective action issue reports (IRs) to determine if there were reliability or performance issues that may have resulted from the modification. The documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

.2.2 ECP-14-000852, Increase Thermal Breaker Size on Core Spray Valves

a. Inspection Scope

The team reviewed modification ECP-14-000852 that replaced 600 Volt (V) breakers for core spray (CS) injection valves. Exelon performed the modification to increase the breaker size to allow throttling/jogging of CS valves without challenging the protective devices. The CS system provides emergency core cooling in the event of a loss of coolant accident. The valves are required to close as required for containment isolation, and open and be capable of throttling as directed by the emergency operating procedures. Exelon evaluated the seismic and environmental qualifications (EQ) of the breaker to verify adequate margin existed for design basis events.

The team reviewed the modification to determine if the design basis, licensing basis, or performance capability of the CS valves had not been adversely impacted by the modification of the breakers. The team interviewed design and EQ engineers and

reviewed coordination curves and vendor specifications to determine if the new breakers met design requirements. Finally, the team performed a walkdown of the breakers to determine if the modification was installed in accordance with the design, and to assess the overall material conditions of the breakers following the modification work. The 10 CFR 50.59 screening determination performed for this modification, was also reviewed as described in Section 1R17.1 of this report. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

.2.3 ECP-14-000679, Liquid Poison Relief Valve Replacement

a. Inspection Scope

The team reviewed modification ECP-14-000679 that replaced the relief valves on each train of the liquid poison system. The relief valves provide over pressure protection for the liquid poison system discharge piping. Exelon performed the modification to provide additional valve liquid relief capacity. The modification was performed as a corrective action to address an NRC identified issue which determined that, due to an upgrade to the liquid poison system positive displacement pumps, the previously installed valves' liquid relief capability were not adequate to ensure piping design pressure would not be exceeded. Exelon performed pre-installation testing on the valves to ensure the valves met lifting pressure requirements and performed post-installation testing to verify the valves were properly installed.

The team reviewed the modification to determine if the design basis, licensing basis, or performance capability of the valve and associated liquid poison pumps had not been adversely impacted by the modifications. The team interviewed design engineers and reviewed design drawings, calculations, and vendor specifications to determine if the valves met the design and licensing requirements of the system. Additionally, the team reviewed post maintenance testing (PMT) results, associated maintenance work orders and lift check procedures to determine if the changes were appropriately implemented. Finally, the team performed a walkdown of the valves to determine if the modification was installed in accordance with the design, and to assess the overall material conditions of the systems following the modification work. The 10 CFR 50.59 screening determination performed for this modification, was also reviewed as described in Section 1R17.1 of this report. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

.2.4 ECP-13-00418, Unit 1 Emergency Service Water Pump Shaft Coupling Modification

a. Inspection Scope

The team reviewed ECP-13-00418 that modified the shaft coupling on the No. 11 emergency service water (ESW) pump. Specifically, following reassembly of the pump shaft motor couplings during a planned pump refurbishment, which included installing a new pump motor and couplings, Exelon technicians identified that the gap between the motor and pump couplings exceeded the required tolerance. Engineering designed and maintenance installed a spacer between the motor shaft coupling and pump shaft coupling in order to satisfy the required gap tolerance between the couplings.

The team reviewed the modification to verify that the design bases, licensing bases, and performance capability of the ESW system had not been adversely impacted by the modification. The team interviewed engineering staff and reviewed technical evaluations associated with the modification to determine if the ESW pump would function in accordance with the design assumptions. The team also performed several walkdowns of the ESW pump to independently assess Exelon's configuration control, the operating environment, and the material condition of the ESW pump and support systems. The team also reviewed completed surveillances, corrective action IRs, and the ESW system health report to determine if there were reliability or performance issues that may have resulted from the modification. The documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

.2.5 ECP-16-000294, Unit 2 Reactor Building Polar Crane Weigh System Bypass Switch and ECP-14-000812, Reactor Building Polar Crane Upgrade (2 samples)

a. Inspection Scope

The team reviewed modification ECP-16-000294 that replaced the Unit 2 Reactor Building Polar Crane (RBPC) weigh system spring-return bypass switch with a key-lock switch. The RBPC weigh system provides a function to prevent lifting the main hoist in the event of an overload condition. During the spring 2016 refueling outage, several invalid overweight and underweight faults were experienced during crane operation due to the weigh system's load cell malfunctioning. Replacing the spring-return momentary bypass switch with a key-lock switch reduced the burden on the crane operator when false conditions were encountered.

The team reviewed the modification to verify that the design bases, licensing bases, and performance capability of the RBPC had not been adversely impacted by the modification. The team interviewed engineering staff and reviewed technical evaluations associated with the modification to determine if the RBPC would function in accordance with the design assumptions and that the crane remained "single-failure-proof" in accordance per NUREG-0544, "Single-Failure-Proof Cranes for Nuclear Power Plants," per licensing commitments.

The team reviewed ECP-14-000812, "Reactor Building Polar Crane Upgrade," which replaced the RBPC motors and controls with a new system. The team verified that the weigh system was not the primary means of providing overload protection for the crane. Instead, new controls and protective features associated with the variable frequency drives for the main hoist motors were relied upon for overload protection. The team also reviewed the procedural controls associated with bypassing RBPC interlocks and protective features to verify that the controls satisfied licensing commitments documented in the UFSAR. Corrective action IRs were also reviewed to verify that Exelon had properly addressed the issues associated with the malfunctioning crane load cell experienced during the refueling outage. The team verified that the controls and features associated with RBPC overload protection were tested during acceptance testing of ECP-14-000812. The team also verified that the licensee had evaluated NEI 08-05, "Industry Initiative on Control of Heavy Loads," and Regulatory Issues Summary (RIS) 2008-28, "Endorsement of NEI Guidance for Reactor Vessel Heavy Load Lifts," for applicability on Units 1 and 2. The documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

.2.6 ECP-14-000823, HVP DIV III Exhaust Fan Circuit Modification

a. Inspection Scope

The team reviewed modification ECP-14-000823 that installed a jumper around the set of control switch contacts for the EDG room exhaust fans. The EDG ventilation system provides temperature control and ventilation for the EDG rooms and EDG control rooms. The ventilation system is required to maintain air temperature below the maximum design temperature of 125°F. Exelon performed the design change because the fans could not be operated manually above 77°F to cool the room without declaring the associated EDG inoperable due to contacts in series that would remain open when the switch was in the normal after start position. If a loss of the bus were to occur, the associated exhaust fan would not re-start when the diesel generator restored power to the bus. The jumper, around the set of control switch contacts that prevent the fan from auto starting, would remain closed with the switch in normal after start and normal after stop; allowing the fan to auto start after a power loss.

The team reviewed the modification to determine if the design basis, licensing basis, or performance capability of the EDG exhaust fans had been degraded by the jumper of the control circuit. The team interviewed design engineers and reviewed logic diagrams to determine if the EDG circuit met design requirements. The 10 CFR 50.59 screening determination performed for this modification, was also reviewed as described in Section 1R17.1 of this report. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

.2.7 ECP-13-00781, Unit 2 Service Water Pump Rebuild and Material Changes

a. Inspection Scope

The team reviewed ECP-13-00781 that modified the materials used during the refurbishment of a Unit 2 safety-related service water (SW) pump (S/N 12386). Specifically, the material changes were limited to the set screw used to lock the sleeve nut which in turn locks the shaft sleeve that provides the running surface for the pump packing, and the sleeve nut elastomeric insert that seals the sleeve nut to the pump shaft to prevent process fluid leakage from under the shaft sleeve and sleeve nut. At the time of the inspection, the modified SW pump was installed on the 'E' SW pump (2SWP*P1E); however, Exelon could install it in any of the six Unit 2 SW pump locations.

The team reviewed the modification to verify that the design bases, licensing bases, and performance capability of the SW system had not been adversely impacted by the modification. The team interviewed engineering staff and reviewed technical evaluations associated with the modification to determine if the SW pump would function in accordance with the design assumptions. The team also performed several walkdowns of the SW pump to independently assess Exelon's configuration control, the operating environment, and the material condition of the SW pump and support systems. The team also reviewed completed surveillances, corrective action IRs, and the SW system health report to determine if there were reliability or performance issues that may have resulted from the modification. The documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

.2.8 ECP-14-000581, Material Change for Disc Spring on NMP1 Electronic Relief Valves

a. Inspection Scope

The team reviewed modification ECP-14-000581 that replaced the main spring in the electronic relief valves (ERV). Exelon replaced the original spring, made of Inconel X-750, with a similar style spring made of Inconel X-718. As part of the modification Exelon verified the spring coefficient was the same as the original spring, the physical dimensions of the two springs were the same, and the valve operated at the pressures required in the licensing basis following completion of the modification. Exelon performed the modification to improve the material characteristics of the spring.

The team reviewed the modification to determine if the design basis, licensing basis, or performance capability of the relief valve had not been adversely impacted by the modification. The team interviewed design engineers and reviewed design drawings, vendor documentation, and calculations to determine if the spring met the design and licensing requirements of the system. Additionally, the team reviewed PMT results and associated maintenance work orders to determine if the changes were appropriately implemented and the valve lift point and post maintenance leakage were within the

required American Society of Mechanical Engineers (ASME) code and licensing specification. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

.2.9 ECP-16-000339, Replace the Unit 1 Emergency Diesel Generator 102 and EDG 103 Timing Relays

a. Inspection Scope

The team reviewed modification ECP-16-000339 that was planned to replace relays in Unit 1's EDG 102 and EDG 103 automatic starting system. The replacement relays were Allen Bradley Relay Model 700RTC and were the subject of several 10 CFR Part 21 Notifications (2015-26-00, 2015-33-00, and 2015-36-00). The Notifications were written because, between 2009 and 2010, the manufacturer made an unpublished design change that replaced the relay's solid state circuitry with a digital complex programmable logic device. Because the manufacturer did not change the part number, the relay had not been evaluated and tested as a digital device in accordance with industry guidelines for safety-related use. This same model relay had already been installed in the Unit 1 automatic depressurization system circuitry and in the emergency condenser initiation circuitry.

The team reviewed the modification to verify that the design bases, licensing bases, and performance capability of the systems with the relays installed or planned to be installed had not been or would not be degraded by the modification. The team interviewed design engineers, and reviewed evaluation and the commercial grade dedication verification and validation report which qualified the relay for safety-related use. The team reviewed the licensee's evaluation the 10 CFR Part 21 Notifications to verify the licensee appropriately addressed the operating experience. The inspectors reviewed post modification test plans and test results to verify that the new relays functioned properly following installation. The team also reviewed corrective action IRs to determine if there were reliability or performance issues that may have resulted from the modification. The documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

.2.10 ECR-15-00047, Reactor Building Closed-Loop Cooling Water System Containment Isolation Logic Modification

a. Inspection Scope

The team reviewed ECR-15-00047 that install key-lock bypass selector switch for the Reactor Building Closed-Loop Cooling Water (CCP) system containment isolation valve circuits associated with reactor recirculation pump cooling. Exelon implemented the modification to eliminate a single-point vulnerability for the reliable operation of the

system. Specifically, failure of one primary containment isolation valve circuit relay causes the closure of either an inboard or outboard CCP containment isolation valve. This results in a loss of cooling water to the reactor recirculation pumps (i.e., pump seal coolers, motor winding coolers, and motor bearing coolers). Operators would then be required to take prompt action to secure the reactor recirculation pumps and cause a plant transient (e.g., reactor shutdown or unplanned reactor scram). The installation of the switches would allow operators to bypass the Primary Containment Isolation system closure signal to the effected CCP valves when a when a valid isolation signal does not exist or the isolation logic power source is lost. This would allow operators to re-open the valves to restore cooling water flow to the reactor recirculation pumps to avoid a potential unnecessary plant transient.

The team reviewed the modification to verify that the design bases, licensing bases and performance capability of the CCP and the Primary Containment Isolation systems had not been adversely impacted by the modification. The team interviewed design engineers, and reviewed evaluations, surveillance results, and associated maintenance work orders to verify that Exelon implemented the modification in accordance with design assumptions. The team verified that administrative controls on the bypass switches were established to ensure the switches would only be used to restore the ability to open the containment isolation valves during an invalid primary containment isolation. The team reviewed the modification to verify that Control Room indication satisfied the guidance in Regulatory Guide 1.47, “Bypassed and Inoperable Status Indication for Nuclear Power Plant Safety Systems.” The team also verified that divisional separation of the newly installed switches and associated wiring was maintained. The documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

.2.11 ECP-13-000524, Separation of the Unit 2 Instrument Air Supply to the Main Steam Safety Relief Valves and the Main Steam Isolation Valves

a. Inspection Scope

The team reviewed modification ECP-13-000524 that installed piping and isolation valves in order to separate portions of the safety-related air systems. Exelon rerouted the instrument air system (IAS) supply header for the NMP2 inboard main steam isolation valves (MSIV) so that this header can be isolated separately from the IAS supply header for the safety relief valves (SRV). The new header which included a new isolation valve was connected at a separate location on the common supply header. Additionally, a normally closed test tap off line on the SRV supply header which included a valve and plug were also installed. The new piping and valves were installed on existing pipe supports and/or the structural steel in the drywell. Exelon evaluated the seismic qualifications of the piping and associated supports to verify adequate structural margin existed for design basis seismic events.

The team reviewed the modification to determine if the design basis, licensing basis, or performance capability of the air systems, SRVs, or MSIVs had not been adversely

impacted by the modification. The team interviewed design engineers and reviewed design drawings and calculations to determine if the new piping and valves met design and licensing requirements. Additionally, the team reviewed PMT results and associated maintenance work orders to determine if the modification was appropriately implemented. Finally, the team reviewed the implementing procedures and associated drawings to determine if they had been appropriately updated to reflect the new configuration. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

.2.12 ECP-16-000278, Revise Unit 2 Degraded Grid, Undervoltage, and Time Delay Relay Calibration Frequency for Emergency Switchgears 2ENS*SWG101, 2ENS*SWG102, and 2ENS*SWG103

a. Inspection Scope

The team reviewed modification ECP-16-000278 that changed the calibration frequency for the Unit 2 degraded grid, undervoltage, and time delay relay for the safety-related emergency switchgears from 24 months to 48 months. The relays function to detect loss of or degraded electrical grid voltage and initiate signals to the 4160-Volt Load Sequencing Logic used during both loss of coolant accident and loss of offsite power events as well as loss of offsite power only scenarios. The calibration frequency change was made in order to better coordinate electrical divisional outages. The team utilized the guidance in Appendix A, “Risk Management Technical Specifications Initiative 5b Surveillance Frequency Control Program,” of Inspection Procedure 71111, Attachment 22, “Surveillance Testing,” as a guide during the review of the change.

The team reviewed the modification to verify that the requirements of TS 5.5.14, “Surveillance Frequency Control Program,” and that the guidance in NEI 04-10, “Risk-Informed Method for Control of Surveillance Frequency,” were satisfied. The team reviewed the design base, the licensing bases, and design calculations to verify the relays had not been degraded by the modification. In particular, the team reviewed EC-196, “Degraded Grid Relay, Undervoltage Relay, and Associated Timer Relay Setpoint Calculation,” to verify that there was adequate margin available to account for setpoint drift due to the extended calibration interval. The team also reviewed calibration test history of the relays to determine whether reliability or performance issues with the relays prior to implementing the modification. The documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

.2.13 ECP-13-000103, 2SWP*FS146A & 2SWP*FS146B – EQV - Magnetic Yokogawa Flow Switch

a. Inspection Scope

The team reviewed modification ECP-13-000103 that replaced the flow switch in the service water effluence cabinets 2SWP*CAB146A and 2SWP*CAB146B. The flow switches monitor for low and high flow rates supplied to the radiation detectors in the effluence cabinets. Exelon replaced the original low power heater probe based switches with a magnetic based Yokogawa switches. Exelon performed the modification to retain calibration and improve operation of the flow switches as a result of biological and/or corrosion buildup on the old heater probe based switches. The replacement flow switches are flanged connection that consist of a Teflon inner lining to minimize coating buildup and do not require a probe to be placed in the into the flow stream.

The team reviewed the modification to determine if the design basis, licensing basis, or performance capability of the flow switches and associated radiation monitors had not been adversely impacted by the modification. The team interviewed design engineers and reviewed design drawings, calculations, and vendor specifications to determine if the valves met the design and licensing requirements of the system. Finally, the team performed a walkdown of the switches and recorders to determine if the modification was installed in accordance with the design, and to assess the overall material conditions of the systems following the modification work. The 10 CFR 50.59 screening determination performed for this modification, was also reviewed as described in Section 1R17.1 of this report. Documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

.2.14 ECP 14-00584, Unit 1 Emergency Diesel Generator No. 102 Copper Tubing Replacement

a. Inspection Scope

The team reviewed ECP 14-00584 that replaced copper tubing with American Society for Testing and Materials (ASTM) A213 stainless steel tubing on several skid-mounted EDG 102 support systems. In 2014, Exelon identified copper instrument tubing on the Unit 2 EDGs that over time could potentially fail due to engine vibration and poor support (CR-2014-0422). Exelon performed an extent-of-condition walkdown and also identified similar copper instrument tubing on the Unit 1 EDGs. This ECP proactively replaced the following copper tubing on EDG 102: (1) a 1/2” lube oil line, (2) a 3/8” air starter line, (3) a 5/8” turbocharger oil separator line, and (4) a 5/8” cooling water line.

The team reviewed the modification to verify that the design bases, licensing bases, and structural integrity of the EDG support system piping had not been adversely impacted by the modification. The team interviewed engineering staff and reviewed technical evaluations associated with the modification to determine if EDG 102 would function in accordance with the design assumptions. The team compared installation plans to the

as-built configuration to determine if Exelon appropriately implemented the modification as designed. The team performed several walkdowns of EDG 102 and its support system piping to independently assess Exelon's configuration control, the operating environment, and the material condition of the associated SSCs. The team also reviewed completed surveillances, corrective action IRs, and the EDG system health report to determine if there were reliability or performance issues that may have resulted from the modification. The documents reviewed are listed in the Attachment.

b. Findings

No findings were identified.

4. OTHER ACTIVITIES

4OA2 Identification and Resolution of Problems (IP 71152)

The team reviewed a sample of problems that Exelon had previously identified and entered into the corrective action program. The team reviewed these issues to verify an appropriate threshold for identifying issues and to evaluate the effectiveness of corrective actions. In addition, the team reviewed corrective action IRs written on issues identified during the inspection to verify adequate problem identification and incorporation of the problem into the corrective action system. The specific corrective action documents that were sampled and reviewed by the team are listed in the Attachment.

b. Findings

No findings were identified.

4OA3 Follow-up of Events and Notices of Enforcement Discretion (IP 71153)

.1 Plant Events

a. Inspection Scope

The team reviewed Exelon's response to a Unit 1 fault in the in-service 11 Reactor Protective System Ultimate Power Supply that resulted in an isolation of both emergency condensers. The inspectors performed a review of Event Notification 52133 as directed by the NRC's review of the event details with criteria contained in Inspection Manual Chapter 0309, "Reactive Inspection Decision Basis for Reactors."

The team reviewed the emergency condensers' Agastat time-delay relay preventive maintenance program. The team reviewed the adequacy of the relay replacement PM. The relays were on a 10-year replacement frequency that has been adjusted to a 2-year replacement frequency due to problems with the relays. Specifically, quarterly testing of the relays has identified several relays with set-point drift. The team interviewed engineers and reviewed condition reports, maintenance work orders and vendor specifications. The team also observed quarterly surveillance testing of the Agastat relays.

b. Findings

No findings were identified.

4OA6 Meetings, Including Exit

The team presented the preliminary inspections results to Mr. R. Kreider, Plant Manager, and other members of Exelon's staff at a debrief on September 30, 2016. The team also presented the inspection results to Mr. A. Sterio, Site Engineering Director, and other members of Exelon's staff at an exit meeting on October 12, 2016. The inspectors verified that no proprietary information was retained by the inspectors or documented in this report.

SUPPLEMENTAL INFORMATION

KEY POINTS OF CONTACT

Exelon Personnel
R. Kreider, Plant Manager
P. Bartolini, Supervisor, Design Engineering
D. Blocher, Design Engineering (Mechanical)
D. Bradshaw, System Manager
R. Close, Senior Staff Engineer, Fuels
P. Doran, Electrical and I&C Design Manager
R. Franklin, Mechanical Design Engineer
R. Glerum, System Manager
S. Homoki, EDG System Manager
G. Inch, Senior Mechanical Design Engineer
P. Martini, Design Engineering
J. Massari, Manager of Engineering Safety Analysis
D. Pokon, Design Engineer
J. Rossman, Electrical I&C Design
F. Sgroi, Design Engineering
J. Shaver, Design Engineering
A. Sterio, Director, Site Engineering
N. Tryt, Design Rapid Response Manager

LIST OF ITEMS OPENED, CLOSED AND DISCUSSED

None

LIST OF DOCUMENTS REVIEWED

10 CFR 50.59 Safety Evaluations
SE-2013-02, Upgrade NMP2 Power Range Neutron Monitoring System (PRNM) for MELLLA PLUS, Revision 0
SE-2013-03, Replace Control Room Air Conditioning System Chillers, dated 1/10/14
SE-2013-04, Nine Mile Point Unit 2 Decay Heat Method Change, dated 5/1/14
SE-2014-01, NMP2 Reload Licensing Method Changes, dated 3/11/14
SE-2015-01, Downgrade Safety Classification of Unit 1 #12 Nitrogen Storage Tank and All Related Support Components and Piping, dated 7/31/15
SE-2015-02, Replace Obsolete Riley Temperature Switches, dated 2/26/15
SE-2016-01, Transition to GNF-2 Fuel – Impact on EAB, LPZ and CR Dose for CRDA, dated 3/8/16
SE-2016-02, Evaluate List of Valves for Potential Exclusion from LLRT Requirements, Revision 0

10 CFR 50.59 Screened-out Evaluations

5059-2014-001, Liquid Poison Relief Valve Replacement, Revision 0*
5059-2014-016 (ECP-14-000514), Install Fuses on Unit 1 Reactor Water Cleanup System Isolation Valve Control Circuit, dated 9/29/14*
5059-2014-018, ESR-14-000407 NMP-ESR (0000) – Replacement Valve for Valve 2SWP*V1E Needs Evaluation, dated 9/30/14*
5059-2014-050, Alternate Control Switch for Magnablast Circuit Breaker, Revision 0*
5059-2014-054, Unit 1 Service Water Radiation Monitor Modification, dated 10/21/14
5059-2014-090, ECP-14-000823 - HVP DIV III exhaust fan circuit modification, Revision 0
5059-2014-109, Alternate Packing Material for Unit 2 Service Water Strainers, dated 11/21/14*
5059-2014-144, Unit 1 Primary Containment Venting Emergency Operating Procedure Revision, dated 12/12/14*
5059-2015-070, Electro-Hydraulic Control Cabinet 125VDC Power Supply Upgrade, dated 2/13/15*
5059-2015-119, SWP 12 Motor Replacement, Revision 0*
5059-2015-345, 3D Monicore Core Performance Monitoring Without 3DM, Revision 0*
5059-2015-400, Temporary Gag for PRV-81-75 on MOT-81-03 Thrust Bearing cooling Coil Lines, Revision 0*
5059-2015-515, Phase 2 (Unit 1) Reg Guide 1.97 Recorder Replacement (ENERCON), Revision 0*
5059-2015-542, Replace Obsolete Riley Temperature Switches, Revision 0
5059-2015-554, CS 122 Pump and Valve Operability Test, dated 12/10/15*
5059-2015-574, Remotely Install Digital Positioner and Controls for 2FWS-LV55A and 2FWS-55B (Startup Feedwater Level Control Valves), dated 1/22/16*
5059-2016-038, Deactivate Core Spray 121 Pressure Relief Valve PRV-81-75 by Installing a Threated Blind Coupling at the Inlet, Revision 0*
5059-2016-044, Add ASME B30.9-2010 Reference to USFAR/USAR, Revision 0*
5059-2016-124-14, Defeating RCIC/Main Turbine Trip Interlock, Steam Isolations and High Exhaust Pressure Trip, dated 2/22/16*
5059-2016-143, Tech Eval of Appendix J Requirements, Revision 0*
5059-2016-151, Nine Mile Point Unit 2 Cycle 16 Core Reload Design, Revision 1*
5059-2016-193, ECP-16-000272 – Appendix J LLRT Scope Reduction, Revision 0
5059-2016-210, Defeating Reactor Core Isolation Cooling/Main Turbine Trip Interlock, Steam Line Isolations and High Pressure Trip, dated 4/14/2016*
5059-2016-225, Temp Change to Bypass Refuel Bridge Rod Out & Start Up Interlocks, dated 4/18/16*
5059-2016-237, Loss of Power Board 11, dated 4/20/16*
5059-2016-241, Open Phase Detection System Implementation (NMP2 Transformers), Revision 0*
5059-2016-277, Turbine Overspeed Trip Device Setpoint Technical Evaluation, dated 5/6/16*
5059-2016-346, Reactor Scram, dated 6/28/16*
*50.59 Screen Sample

Modifications

ECP-13-000103, 2SWP*FS146A & 2SWP*FS146B – EQV - Mag+A9+A1:A18+A1:A19+A9+A1:A18+A1:A18+A1:A17+A1:A1+A1:A20
ECP-13-000524, Separation of the Unit 2 Instrument Air Supply to the Main Steam Safety Relief Valves and the Main Steam Isolation Valves, Revision 2*
ECP-13-000590, NMP2 Cycle 15 MELLLA+ Reload Licensing, Revision 0

ECP-13-000693, NMP2 APRM Setpoint Change and Enable DSS-CD for MELLLA+ Implementation, Revision 1
ECP-13-00418, Unit 1 Emergency Service Water Pump Shaft Coupling Modification, Revision 0*
ECP-13-00781, Unit 2 Service Water Pump Rebuild and Material, Revision 0*
ECP-14-000581, Material Change for Disc Spring on NMP1 Electronic Relief Valves, Revision 0*
ECP-14-000679, Liquid Poison Relief Valve Replacement, Revision 0*
ECP-14-000812, Reactor Building Polar Crane Upgrade*
ECP-14-000823, HVP DIV III Exhaust Fan Circuit Modification, Revision 0*
ECP-14-000852, Increase Thermal Breaker Size on Core Spray Valves, Revision 0*
ECP-14-00584, Unit 1 Emergency Diesel Generator No. 102 Cooper Tubing Replacement, Revision 1*
ECP-14-00915, Unit 2 Division 2 Emergency Diesel Generator Fuel Oil Piping Rerouting, Revision 0*
ECP-15-000161, Service Water Pump 12 Motor Replacement, Revision 0
ECP-15-000320, Transition to GNF-2 Fuel – Impact on EAB, LPZ, and CR Dose for CRDA, Revision 1
ECP-15-000434, Replace Riley Temperature Switches with Yokogawa Recorders, Revision 0*
ECP-15-000571, NMP1 Control Room Recorder Replacement, Revision 0
ECP-15-000618, Deactivate Core Spray 121 Pressure Relief Valve PRV-81-75, Revision 0
ECP-16-000272, Appendix J LLRT Scope Reduction, Revision 0
ECP-16-000278, Revise Unit 2 Degraded Grid, Undervoltage, and Time Delay Relay Calibration Frequency for Emergency Switchgears 2ENS*SWG101, 2ENS*SWG102, and 2ENS*SWG103, Revision 0*
ECP-16-000294, Unit 2 Reactor Building Polar Crane Weigh System Bypass Switch, Revision 0*
ECP-16-000339, Replace the Unit 1 Emergency Diesel Generator 102 and EDG 103 Timing Relays, Revision 0*
ECR-15-000047, Reactor Building Closed-Loop Cooling Water System Containment Isolation Logic Modification*
* Modification Sample

Assessments
AR 2491614-04, NMP 10 CFR 50.59 Review Process Check-In Self-Assessment, dated 1/20/16

Calculations & Analysis
EC-196, Degraded Grid Relay, Undervoltage Relay, and Associated Timer Relay Setpoint Calculation, 04/18/2016
ECP-14-000915 – 1 ½" OD Tubing Re-routing Autopipe Analysis, dated 12/8/14
ECP-15-000320-CN-023 H21C-103-00.00, H21C-103 U2 CRDA, AST Methodology Impacted by NMP2 GNF2 NFI, Revision 0
ECP-15-000320-CN-024 PSAT 3101CF.QA.03-01.00, Design Database for Application of the Revised DBA Source Term to NMP2 Impacted by GNF2 NFI, Revision 0
ESR-16-000214, Evaluation of Allen-Bradley 700 RTC Relay EMI/RFI Susceptibility
H21C-103, U2 CRDA, AST Methodology, Revision 0
MDC-11, Pump Curves and Acceptance Criteria, Revision 17
MS-1328, Seismic Amplified Response Spectra – South Electrical Tunnel & Diesel Generator Building, Revision 5
PSAT 3101CF.QA.03, Design Database for Application of the Alternate DBA Source Term to Nine Mile Point Unit 2, Revision 1

Corrective Action Condition Reports (CRs)
CR-2013-03174
CR-2014-00422
CR-2014-06322
CR-2014-001676
CR-2011-007960

Corrective Action Issue Reports (* IR written as a result of this inspection)

1700553	2425902	2602116
1700638	2422422*	2609409
1700766	2472486	2615659
1985687	2473038	2615665
1993987	2510982	2635977
2001315	2524898	2666069
2001444	2528609	2698136
2002711	2530995	2670404
2002725	2543277	2700680
2002736	2548890	2712781
2004075	2556443	2715685*
2004823	2556467	2715754
2009127	2559745	2715901*
2382552	2559892	2717257
2394782	2566775	2721034*
2394873	2566781	2721963*
2403885	2566800	
2421728	2569876	
2421926	2599380	

Design & Licensing Bases
NEDC-33351P, Safety Analysis Report for Nine Mile Nuclear Station Unit 2 Constant Pressure Power Uprate, Revision 0
NRC Request for Additional Information Regarding Nine Mile Point Nuclear Station, Unit 2 – RE: The License Amendment Request for Extended Power Uprate, December 23, 2009
NRC Safety Evaluation by the Office of Nuclear Reactor Regulation Related to Amendment No. 200 to Facility Operating License No. NPF-21 to Adopt ORIGEN-ARP for Calculating Fuel Pool Decay Heat Load, dated February 8, 2007 (ML070180741)
SDBD-502, Unit 1 Service Water System Design Basis Document, Revision 7
SRP-15.0.1, Standard Review Plan for Radiological Consequence Analyses Using Alternative Source Terms, Revision 2
Response to Request for Additional Information Regarding Nine Mile Point Nuclear Station, Unit 2 – The License Amendment for Extended Power Uprate, February 9, 2010

Drawings

0007.224-001-137, Elementary Diagram Power Range Neutron Monitoring System, Revision 5
0007.225-001-007, Elementary Diagram Reactor Protection System, Revision 8
C-18007-C, Reactor Core Spray P & I Diagram, Revision 60
C-18019-C, Reactor Liquid Poison System P & I Diagram, Revision 36
C-18022-C, Unit 1 Service Water Reactor & Turbine Buildings P & I Diagram, Revision 83
C-22379-C, Interconnection Diagram Control Board Panel 1J2, Revision 26
C-900331, Pressure Relief Valve, Revision B
MD24102, Pump - Refurb. Model 3415M Size 14x16 – 22H, Revision B
PID-11B, Unit 2 Service Water System Piping & Instrumentation Diagram, Revision 20
PID-19A, Instrument and Service Air, Revision 16
PID-19B, Instrument and Service Air, Revision 45
PID-19D, Instrument and Service Air, Revision 22
PID-32A, Low Pressure Core Spray, Revision 19
PID-33A, High Pressure Core Spray System, Revision 18

Evaluations

AR 2425902-02, Containment Spray Raw Water Pump 111 Lost Flow Equipment Apparent Cause Evaluation, dated 1/23/15
AR 2472486-02, MRFF Evaluation (No. 12 ESW Pump Trip), dated 4/17/15
CR-2014-06322, Service Water Pump 'E' Coupling Failure Apparent Cause Evaluation, dated 8/20/14
ECP-14-000662-015-6-01, Equivalent Change Technical Evaluation, Revision 0
Surveillance Test Interval Evaluation NM-15-003, Loss and Degraded Voltage Relay Testing from 24 Months to 48 Months, Revision 0

Miscellaneous

EP-AA-1013, Addendum 3, Unit 1 Emergency Classification Technical Bases, Revision 0
PCR-13-04862, N1-SOP-30.1 Procedure Change Request, dated 9/10/13
PCR-14-00724, N1-SOP-30.1 Procedure Change Request, dated 2/10/14
PCR-16-01039, N1-SOP-30.1 Procedure Change Request, dated 3/19/16
PCR-16-02174, N1-SOP-1 Procedure Change Request, dated 6/28/16
PCR 14-05499, 14-05946, and 14-06694, N1-EOP-4.1, Procedure Change Request, dated 12/12/14
Ltr. from Sargent and Lundy to Exelon Nuclear Nine Mile Point Nuclear Station, Interim Fast Bus Transfer Results for Emergent Service Water Pump 12 Motor Replacement, dated 3/10/15
Ltr. from US NRC to CENG Nine Mile Point Nuclear Station, License Amendment Request Pursuant to 10 CFR 50.90: Maximum Extended Load Line Limit Analysis Plus, dated 11/1/13
MA-AA-716-021, Rigging and Lifting Program, Revision 27
N1A41502VALVE002, Instruction Manual – 1x2 JMB-45-WR, Revision 0
N1-MSP-GEN-251, ASME OM Code Pressure Relief Valve Removal, Bench Testing and Installation, performed 1/23/15
N1-SD-022, Liquid Poison System, Revision 4
N1-ST-Q8A, Liquid Poison Pump 11 and Check Valve Operability Test, performed 7/18/16
N1-ST-Q8B, Liquid Poison Pump 12 and Check Valve Operability Test, Revision 01100
N2-OSP-CSH-R@001, HPCS Pressure Isolation Valve Leakage Test, Revision 00500
N2-OSP-RHR-R@001, RHR Loop A Pressure Isolation Valve Leakage Test, Revision 00800

NEDC-33075P-A, GE Hitachi Boiling Water Reactor Detect and Suppress Solution – Confirmation Density, dated November 2013
PO 0057937, Certificate of Performance – Valve ERV 1525VX-3, dated 3/16/15
Regulatory Guide 1.7, Control of Combustible Gas Concentrations in Containment, Revision 3
Regulatory Guide 1.97, Instrumentation for Light-Water-Cooled Nuclear Power Plants to Assess Plant and Environs Conditions During and Following an Accident, Revision 2
Regulatory Guide 1.183, Alternative Radiological Source Terms for Evaluating Design Basis Accidents at Nuclear Power Reactors, July 2000
RIS 2005-25, Supplement 1, Clarification of NRC Guidelines for Control of Heavy Loads, dated 5/29/07
T-161380, Anderson Greenwood Crosby – Test Procedure, performed 1/14/15
TO/CO Plan No. 201600006, ECP-16-000312 Restoration Troubleshooting Log, dated 5/4/16
TR90725-06N-1, Electromagnetic Interference Qualification Report for Yokogawa DX Advanced Series Recorders, Revision 2

Operating Experience
Licensee Event Report 05000325/2015-002-01, Emergency Diesel Generator Loss of Safety Function, 11/16/2015
NRC Information Notice 89-07, Failures of Small-Diameter Tubing in Control Air, Fuel Oil, and Lube Oil Systems Render Emergency Diesels Inoperable, dated 1/25/89
NRC Information Notice 2011-21, Realistic Emergency Core Cooling System Evaluation Model Effects Resulting from Nuclear Fuel Thermal Conductivity Degradation, dated 12/13/11
Part 21 P21-04302015, Report of Potential 10CFR21, Allen-Bradley Timing Relay Model 700 RTC, 04/30/2015
Part 21 2015-33-01, Written Part 21 Notification Related to Allen Bradley 700RTC Relay Configuration, 06/25/2015

Preventive Maintenance and Inspections
GAP-HSC-02 Attachment 2, C92683682 Fluid System Aging Inspection and Cleanness Verification (ENG-DG-102), performed 11/18/14
GAP-HSC-02 Attachment 2, C92913481 Fluid System Aging Inspection and Cleanness Verification (2EGS*EG3), performed 12/9/14
GAP-HSC-02 Attachment 5, SW/PMP-72-04 System/Component Inspection Record, dated 4/19/13

Procedures
14-81F026, Core Spray Pump Motor Cooling Line for Pump #122, Revision 2
CC-AA-10, Configuration Control Process Description, Revision 8
CC-AA-102, Design Input and Configuration Change Impact Screening, Revision 29
CC-AA-103, Configuration Change Control for Permanent Physical Plant Changes, Revision 28
CC-AA-103-1001, Configuration Change Control Guidance, Revision 5
CC-AA-107, Configuration Change Acceptance Testing Criteria, Revision 9
CC-AA-107-1001, Post Modification Acceptance Testing, Revision 5
CC-AA-256, Process for Managing Plant Modifications Involving Digital Instrumentation and Controls Equipment and Systems, Revision 3
CC-AA-309-101, Engineering Technical Evaluations, Revision 15
LS-AA-104, Exelon 50.59 Review Process, Revision 10
LS-AA-104-1000, Exelon 50.59 Resource Manual, Revision 10
N1-EOP-4.1, Primary Containment Venting, Revision 00900
N1-OP-18, Service Water System, Revision 42

N1-OP-45, Emergency Diesel Generators, Revision 39
N1-MMP-072-117, Maintenance of Emergency Service Water Pumps, Revision 6
N1-SOP-1, Reactor Scram, Revision 25
N1-SOP-30.1, Loss of Power Board 11, Revision 6
NAI-MAI-21, NMP Lifting and Rigging Instruction, Revision 00200
NDEP-SP-7.02, Visual Examination of Welding Operations, Revision 11
N2-ARP-602100, 2CEC*PNL602 Series 100 Alarm Response Procedures, Revision 00001
N2-EOP-6.2, Defeating RCIC/Main Turbine Trip Interlock, Steam Isolations and High Exhaust Pressure Trip, Revision 00100
N2-MMP-SWP-105, Maintenance of Service Water Pumps, Revision 8
N2-OP-11, Service Water System, Revision 12
N2-OP-19-LINEUPS, Instrumentation and Service Air Systems – Lineups, Revision 00700
N2-OP-38, Spent Fuel Pool Cooling and Cleanup System, Revision 02300
N2-OP-84, Reactor Building Crane, Revision 00400
N2-OP-101A-LINEUPS, Plant Startup Lineups, Revision 00200
N2-OP-100A, Standby Diesel Generators, Revision 18
N2-SOP-97, Reactor Protection System Failures, Revision 00700
N2-SOP-04, Loss of DC Power, Revision 00400
N2-SOP-71, Loss of 2VBB-UPS1A, 1B, 1G, Revision 00800
N2-Special Operating Procedure 29.1, Reactor Coolant Pump Seal Failure, Revision 00300
N2-MFT-318, Modification Functional Test for Nine Mile Point Unit 2 Polar Crane, Revision 00300
N2-MPM-GEN-903, Reactor Vessel Disassembly, Revision 01500
PI-AA-120, Issue Identification and Screening Process, Revision 6
PI-AA-125, Corrective Action Program (CAP) Procedure, Revision 4
S14-42M003, Liquid Poison System IST Test Pressure and Pump Curve, Revision 5
S22.2-XX-G061NF, NMP2 Fuel Related EOP Input Cycle 15 MELLLA+, Revision 4

Surveillance, Functional, and Modifications Acceptance Tests
FATR-06617487-1, Factory Acceptance Test/Dedication Report for Trane RTWD Chillers with CH530 Digital Controls, Revision 2
N1-PM-V2, Pump Curve Validation Test, performed 4/29/13
N1-ST-M4A, Emergency Diesel Generator 102 and PB 102 Operability Test, performed 7/25/16
N1-ST-Q13, Emergency Service Water Pump and Check Valve Operability Test, performed 8/4/16
N1-ST-Q1D, CS 122 Pump and Valve Operability Test, performed 6/16/16
N2-ESP-ENS-R733, Operating Cycle Calibration for Loss and Degraded Voltage Relays on Emergency Switchgear 2ENS*SWG101, performed on 4/08/2014
N2-ESP-ENS-R733, Operating Cycle Calibration for Loss and Degraded Voltage Relays on Emergency Switchgear 2ENS*SWG101, performed on 4/16/2016
N2-ESP-ENS-R733, Operating Cycle Calibration for Loss and Degraded Voltage Relays on Emergency Switchgear 2ENS*SWG102, performed on 4/25/2016
N2-ESP-ENS-R733, Operating Cycle Calibration for Loss and Degraded Voltage Relays on Emergency Switchgear 2ENS*SWG103, performed on 5/3/2012
N2-ESP-ENS-R733, Operating Cycle Calibration for Loss and Degraded Voltage Relays on Emergency Switchgear 2ENS*SWG103, performed on 3/31/2014
N2-ESP-ENS-R735, Operating Cycle Calibration for Loss and Degraded Voltage Relays on Emergency Switchgear 2ENS*SWG102, performed on 4/15/2014
N2-PM-R@003, Turbine Overspeed Testing, performed 5/6/16
N2-OSP-EGS-M@001, Diesel Generator and Diesel Air Start Valve Operability Test – Division I and II, performed 8/30/16

N2-OSP-SWP-Q002, Service Water Pump and Valve Operability Test, performed 5/16/16
N2-ST-V14, Service Water Check Valve and Emergency Service Water Pump and Check Valve Test, performed 4/28/13
S-EPM-GEN-004, Insulation of Power, Control, and Instrument Cable Connections, performed 4/25/13
S-EPM-MPM-V080, Site AC Motor Predictive Maintenance Testing, performed 4/17/13
S-TTP-PUMP-@001, Generic Pump Curve Validation Procedure, performed 4/28/13

System Health Reports, Walkdown Reports, & Trending
Unit 1 Emergency Diesel Generator System Health Report, Q2-2016
Unit 1 Pump 72-04 IST Testing Data, for the period 4/28/13 – 8/4/16
Unit 1 Service Water System Health Report, Q2-2016
Unit 2 Emergency Diesel Generator System Health Report, Q1-2016
Unit 2 Monthly Diesel Walkdown Report, dated 8/17/16
Unit 2 Service Water System Health Report, Q1-2016

Vendor Manuals, Standards, and Specifications
0000-0139-1272, Replacement Emergency Service Water Pump Motor Operation and Maintenance Instructions, March 2013
MS-18, Installation of Instruments, Instrument Tubing and their Supports – Unit 1, Revision 5
N1G08000MOTOR009, Instruction, Vertical Induction Motor Frame 284-405, B324-B445 Open Enclosure, Revision 1
N1W31500PUMP004, Worthington Short Coupled Pumps Instruction Manual and Parts List, Revision 1
N1W31500PUMP005, Worthington Well Pumps Instruction Manual and Parts List, Revision 4
N2G20000PUMP002, Instruction Book for Service Water Pumps, Revision 13
NEI 01-01, Guideline on Licensing Digital Upgrades, EPRI TR-102348, Revision 1
NEI 04-10, Risk-Informed Method for Control of Surveillance Frequency, Revision 1
Nuclear Energy Institute (NEI) 08-05, Industry Initiative on Control of Heavy Loads, Revision 0
NUREG-0544, Single-Failure-Proof Cranes for Nuclear Power Plants, May 1979
PSRS-79, Diesel Generator Cooling Water Piping Specification Standard, Revision 7
PSRS-79.1, Diesel Generator Lube Oil Piping Specification Standard, Revision 1
PSRS-96, Diesel Generator Starting Air Piping Specification Standard, Revision 4
QR-700RTC-1, AZZ Nuclear/NLI EMI/RFI Qualification Report for Allen-Bradley Relay Mocel: 700RTC, Revision 0, October 2015
S0-INSTRU-M002, Standard Specification for I&C Tube Clamp Spacing, Revision 00A
Specification No. NMP2-P281F, Digital Radiation Monitoring System, Revision 3
TB-16-001, AZZ/NLI Nuclear Logistics Inc. Technical Bulletin, Allen-Bradley 700RTC Ferrite Installation, Revision 0
VVR-700RTC-01, AZZ Nuclear/NLI Commercial Grade Dedication/Verification and Validation Report, Revision 0, January 2016
Vendor Manual N2K020001X1TR001, Radiation Monitoring System, Revision 10

Work Orders

C91028231	C92462035	C92913481
C91080265	C92462169	C92918928
C91423459	C92683682	C93189660

LIST OF ACRONYMS

ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
CCP	Reactor Building Closed-Loop Cooling Water
CFR	Code of Federal Regulations
CR	Condition Report
CS	Core Spray
DRS	Division of Reactor Safety
ECP	Engineering Change Package
EDG	Emergency Diesel Generator
EQ	Environmental Qualification
ERV	Electronic Relief Valve
ESW	Emergency Service Water
Exelon	Exelon Nuclear
IAS	Instrument Air System
IP	Inspection Procedure
IR	Issue Report
MSIV	Main Steam Isolation Valve
NEI	Nuclear Energy Institute
NMPNS	Nine Mile Point Nuclear Station
NRC	Nuclear Regulatory Commission
PMT	Post Maintenance Test
RBPC	Reactor Building Polar Crane
RIS	Regulatory Issues Summary
SSC	Structure, System, and Component
SRV	Safety Relief Valve
SW	Service Water
TS	Technical Specification
UFSAR	Updated Final Safety Analysis Report
V	Volts